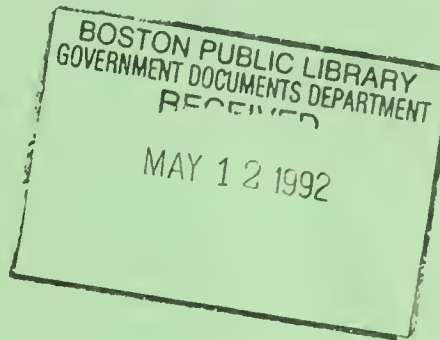


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THE MISSING RUNG:

A Study of Career Opportunities for Boston Residents
in Boston Hospitals and Long Term Care Facilities



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HIGHLIGHTS OF THE REPORT

- Boston's health care industry, which employs over 65,000 people, is the city's largest source of employment for the City's residents, providing jobs to some 20,000 Bostonians, or 13% of total employment. The industry pumps \$2 billion, or 14% of the city's aggregate payroll, into the Boston economy annually.
- Boston hospitals are large, complex organizations with a rich variety of jobs at various skill levels. 40% of the work force have at least two years of technical training, while **25% of the work force have less than two years of technical training**. One third of the jobs require a bachelors degree or higher.
- Despite the slow regional economy, health care employment growth has been steady over the past five years at over 3% annually in Boston. 2,000 new jobs were created in Boston's health care industry in 1991, and over 3,200 new permanent (non-research) jobs in Boston's health-care industry will be created over the next two years. Further growth may be expected from deregulation.
- Over 80% of Boston residents who are health care employees are in entry-level jobs. Only 1% of Boston public school graduates have entered health professions since 1978, due to numerous gaps in the public education-through-four-year college degree programs.
- Entry level workers could have significant opportunities to advance their careers, gain substantial economic opportunity, and fill high-demand positions in Boston hospitals if an educational ladder and support services were developed to support their growth along a career ladder. Internal and external barriers to mobility persist.
- EDIC invests over \$2 Million in 1992 for health care training, providing career opportunities for over 800 Boston residents. Strong partnerships with health care employers have been developed through Memoranda of Agreement, employer advisory boards, and innovative programs. **Despite this investment, the potential to advance the careers of current Boston entry-level and mid-level health care workforce remains largely untapped.**
- The Commonwealth is missing an opportunity to strengthen the partnership with Boston and the city's health care industry to prepare a high-skill labor force.
 - No public four-year institution in Boston offers allied health education. Yet, state university budgets have been cut by 30% over the past four years.
 - Boston's community colleges have experienced budget cuts of more than 20% over the past four years. Funding cuts at community colleges and state universities limit their ability to offer part-time and evening courses which could provide greater access to entry-level health care workers.
 - **Governor William Weld's Futures Commission has recommended a restructuring of roles for state and community colleges which has raised fears among many Boston residents that suburban campuses such as Mass. Bay CC, Middlesex CC, and Worcester State College have been slated for health care and biomedical training. Since, in this system, Boston residents who could most benefit from health career preparation will have the least access, these policies should be closely examined.**
- While widespread labor shortages are no longer prevalent, Boston hospitals report a labor shortage in job areas such as: Physical Therapist, Medical Technologist, Occupational Therapist, Ultrasonographer, Radiologic Technologist, and Physician's Assistant. A projected shortage in Nursing is likely without a major recruitment and education effort.

- Hospitals identify inadequate English language, math, science and other basic educational preparation as the greatest impediments to career mobility in their workforce.
- Boston's long term care facilities provide over 5,000 jobs, some 75% of which are held by Boston residents. The long-term care industry, and its entry-level workforce, is isolated from the resources of both the larger health care industry and educational institutions. Multiple barriers to career mobility exist for entry-level long-term care workers.

KEY RECOMMENDATIONS

- Boston's Vocational/Technical education system should be dramatically retooled, featuring a key emphasis upon partnerships with higher education and major health care institutions.
- On all health care development projects, EDIC will continue to negotiate strategic Memoranda of Agreement with Boston health care institutions to increase employment and mid-level and professional career opportunities for Boston residents.
- The State should provide adequate resources to community colleges and state universities to enable them to develop flexible health care credentialing programs, and to support continuing education programs for the health care industry to ensure maximum participation by Boston residents.
- Boston teaching hospitals should enter into collaborative relationships with community-based organizations and educational institutions to address their workforce literacy, English-as-a-Second language, and career ladder programs for their employees.
- Boston teaching hospitals should offer child care and other support services which would enable their entry-level employees to access education and training opportunities.
- Using Labor Shortage Initiative and other appropriate funding, EDIC will provide seed money for collaborative programs which include alternate certification, articulation, and sequential education/skills training curricula leading to technical and professional credentials for Boston residents.
- Innovations catalyzed by Boston teaching hospitals, such as partnerships with Boston Public Schools programs, should be replicated. These include promising models such as the Fenway/Children's Hospital Collaborative, Boston City Hospital's BAHEC, Project Pro-Tech, and the New England Medical Center/Boston High Collaborative.
- Career pathways in the long-term care industry should be developed in conjunction with larger employer groups, such as hospitals and the hospitality industry.



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INTRODUCTION

Boston's health care industry is the city's largest source of employment for the City's residents, providing 13% of total employment—representing 20,000 jobs for Boston residents. Over one-third of all health care employees in the City are Boston residents. The industry's employment impact in Boston has outperformed the industry nationally and state-wide, thus, emerging as a major source of jobs in Boston. The industry's share to Boston's total jobs increased from 2% in 1970 to 12% in 1990, surpassing the industry's 7.8% and 9% share to total jobs in the nation and the state, respectively.

New reimbursement systems, the introduction of new technologies, and the aging of our state's population all brought change to the health care work place during the past decade. New technologies have improved the diagnosis of disease and allowed more patients than ever before to be treated outside of institutional settings. Hospital stays grew shorter while patients required more intensive care and the services for higher levels of nursing staff. Long term care facilities served older and sicker patients who were not able to be managed by outpatient or acute care settings. The introduction of new technologies was also accompanied by increased skill requirements, distinguishing health care from many other industries, in which increased technology has been accompanied by lower skill requirements.

With national recovery still uncertain, the health care/health services industry has been the one constant source of growth and stability in the Boston economy. While all major industries experienced job losses in 1991, health care services in Boston grew by 3.4% (2nd quarter 1990 to 2nd quarter 1991), creating over 2,000 net new jobs in the City. This compares to the industry's 3.1% employment growth in Massachusetts in 1991 (November 1990-November 1991). Projections to the year 2000 indicate that employment in health care services will continue to grow, increasing more rapidly than the overall economy in the U.S., Massachusetts, and Boston.

Boston's health services industry pumped \$2.0 billion, or 14%, of a total city payroll of \$14.1 billion, into the local economy in the form of payroll in 1989. This reflects a 38% increase in payroll since 1987. The earnings impact of the industry in Boston also outperformed that of the state and Metro Boston area. Boston's health services industry had an average annual wage of \$31,273 in 1990, an average of 14% higher than the industry's average wage in the Metro Boston area and Massachusetts.

By the end of the 1980's, the labor shortage caused by strong demand for skilled workers, extremely high turnover rates, and plentiful opportunities in other growing sectors reached crisis proportions. Disaster was averted by significant pay increases for some skilled categories of workers, particularly nurses. These increases, along with the use of flexible scheduling and other human resource adjustments, drew highly trained workers back into the health care setting. Over the past eighteen months, however, the onset of a regional recession has reduced turnover and rising unemployment has temporarily stabilized the supply of health care workers.

Although the manufacturing sector, particularly the Massachusetts high technology industry, continues to experience serious job erosion and restructuring, Boston's health care industry remains robust. Over half of the major development projects in the city's pipeline for 1992 are hospital modernization or research expansion projects. Five healthcare and institutional modernization projects alone are expected to generate 2,310 permanent health care jobs. As Boston's hospitals continue to grow and require space for development, it should be noted that this growth does not add to the city's tax base. As non-profit institutions, any tax revenue benefit, such as employment taxes, accrues only to the Commonwealth. Conversely, these large and expanding institutions' requirements for city services such as police, fire, roads, and other infrastructure continue to grow.

Boston hospitals continue to spend over \$12 million per year on advertising, temporary pools, and recruitment. Recent changes in U.S. immigration law will make the hiring of foreign temporary professionals more difficult, thereby creating greater demand for locally-trained health care workers.

The Weld administration's proposed deregulation of the Commonwealth's health care industry is likely to generate continued growth for Boston's teaching hospitals, as patient market share becomes increasingly dependent upon institutions' ability to negotiate volume discounts with major insurers. Inevitably, some smaller suburban and rural hospitals will be forced to close, resulting in the absorption of their patients by larger urban academic medical centers or their suburban "satellites." While the net effect of deregulation on cost and quality of care is difficult to predict, it is likely that capital investment in plant and equipment will continue as Boston's institutions compete to increase their base of local, out-of-state, and even international patients.

This recently completed EDIC survey of employment in Boston hospitals shows continuing strong demand for mid-level and college-educated workers, including ultrasonographers, medical technicians, medical technologists, physical therapists, occupational therapists, and physicians' assistants. Demand for long-term care workers is expected to be stable, with continuing steady demand for licensed practical nurses in particular.

EDIC has developed, and will continue to negotiate, memoranda of understanding with Boston teaching hospitals which will promote career mobility and meaningful employment at good wages for Boston residents. Several new pilot job training programs were initiated by EDIC through the Neighborhood Jobs Trust and the Labor Shortage Initiative programs in 1991. EDIC's total investment in health care training is over \$2 million in the current fiscal year. A linked program of education, counseling, and skills training programs involving partnerships among hospitals, long-term care institutions, Boston Public Schools, higher education institutions, community-based organizations, and labor unions will be further developed in order to provide Boston residents with access to employment and workplace career ladders in the health care industry.

THE STUDY

The study was conducted in support of EDIC's efforts to promote employment opportunities, job training and career growth for Boston residents while ensuring a quality workforce for Boston's employers. It was designed to:

- determine the growth potential for jobs in Boston acute care and long term care facilities;
- identify opportunities for creating career ladders for workers in Boston's medical institutions;
- understand the role Boston residents play in the regional medical workforce;
- determine what role EDIC can play in preparing Boston residents for health careers and career mobility.

The institutions surveyed and the response rates are listed below:

- acute care hospitals located in Boston; response rate: 51.8%
- long term care facilities (former levels I-IV) located in Boston; response rate 48.4%
- selected health facilities in the metro area, including one long term care facility; response rate: 50%
- metro area educational institutions which offer training in health careers targeted in study; response rate: 90%.

In addition, interviews were conducted with educational institutions, hospital human resources directors, nursing home executive directors, and trade associations to gain a more detailed perspective on the issues.

EMPLOYMENT PROFILE IN BOSTON HOSPITALS

Employment

Boston hospitals represent a major source of employment for Boston residents. Of the approximately 17,000 jobs identified in responding Boston hospitals, 41.95% are filled by Boston residents. If these numbers are projected from responding institutions to all acute care institutions in the city, an estimate of 16,780 acute care jobs held by Boston residents is obtained.

The labor market in which Boston residents compete for jobs does not appear to be regional. Eight metro area hospitals were surveyed to determine the extent of Boston resident participation in the regional medical labor force. The four institutions which responded identified only 85 jobs (out of 3,406) filled by Boston residents. Employment of Boston residents ranged from 0-2% in hospitals and was 11% by a long term care facility which has one of the region's 3 Licensed Practical Nurse (LPN) schools. This larger number of Boston residents may be attributable to hiring graduates of the LPN school.

Typically, Boston residents work in entry-level job categories such as environmental services, housekeeping, and dietary services. EDIC estimates that over 80% of the total Boston residents health-care workforce is employed in lower-level service positions. This entry-level workforce represents a largely untapped pool of potential mid-level and degreed workers in high-demand areas.

Growth

Employment growth in Boston hospitals over the next two years is projected to be slow but steady. Respondents to the survey anticipate the creation of 531 new jobs in the next two years which translates to 1,250 jobs city-wide.

New hospital construction is expected to generate over 2,000 new permanent health-care (i.e., non-research) jobs. Further growth and expansion, while uncertain, is likely due to deregulation and Boston hospitals' competitive advantages due to capital improvement and ability to absorb changes in reimbursement.

Supply

Hospitals report that the shortages of workers experienced in the late eighties has eased considerably. They attribute the easing of the shortage to higher salaries for key occupations such as nursing, as well as to the regional recession, which has lowered turnover and increased the available pool of workers. While the shortage has eased, there is reason to be concerned about the adequacy of the supply of skilled workers in upcoming years.

Hospitals reported using three general strategies in addition to wage increases to maintain an adequate pool of workers. These include increased training opportunities, recruitment mechanisms and incentives, and internal labor market mechanisms such as contract services and temporary pools.

Access to training through tuition reimbursement is available at all responding hospitals. Boston hospitals report a median tuition reimbursement amount of \$1500. In addition, hospitals reported offering scholarships, participation in internships and cooperatives, and providing on the job training, and basic skills education to employees. Overall, reporting hospitals spend an estimated \$2.8 million each year on training; an estimate for all Boston acute care institutions is \$6.5 million.

It should be noted that for single parents and employees in low wage jobs, the availability of tuition reimbursement and scholarships may not be sufficient to provide access to opportunities. Many low wage employees work more than one job in order to support their families. Without replacement of lost income

they are unable to take courses. Single parents are often unable to further their education unless child care is available. In addition, English as a Second Language and basic education may be required before employees are able to qualify for educational offerings in local educational institutions.

Recruitment mechanisms include using search firms, offering sign-on bonuses, and advertising. Boston hospitals reported budgets for advertising that average \$334,375. If this amount is projected across the total pool of Boston hospitals, an estimated \$5-6 million is spent each year on advertising for employees.

The most frequently used internal labor market mechanism is the temporary labor pool. An estimated \$5-6 million continues to be spent across the Boston hospital system on temporary agencies. Sixty four percent of Boston respondents have internal temporary pools; nursing and clerical/secretarial occupations are most frequently involved in these pools. It is noteworthy that major changes in the structure of the work environment such as flexible shifts and job restructuring were only mentioned by one institution each as a response to the shortage. Likewise, despite general agreement that child care is one of the biggest obstacles that workers face to upward mobility, only one hospital mentioned the addition of day care as a strategy.

While widespread shortages are no longer prevalent, Boston hospitals reported a range of job titles as still having shortages. The most commonly occurring responses are:

Physical Therapist
Medical Technologist
Occupational Therapist
Ultrasonographer
Radiologic Technologist
Physician's Assistant

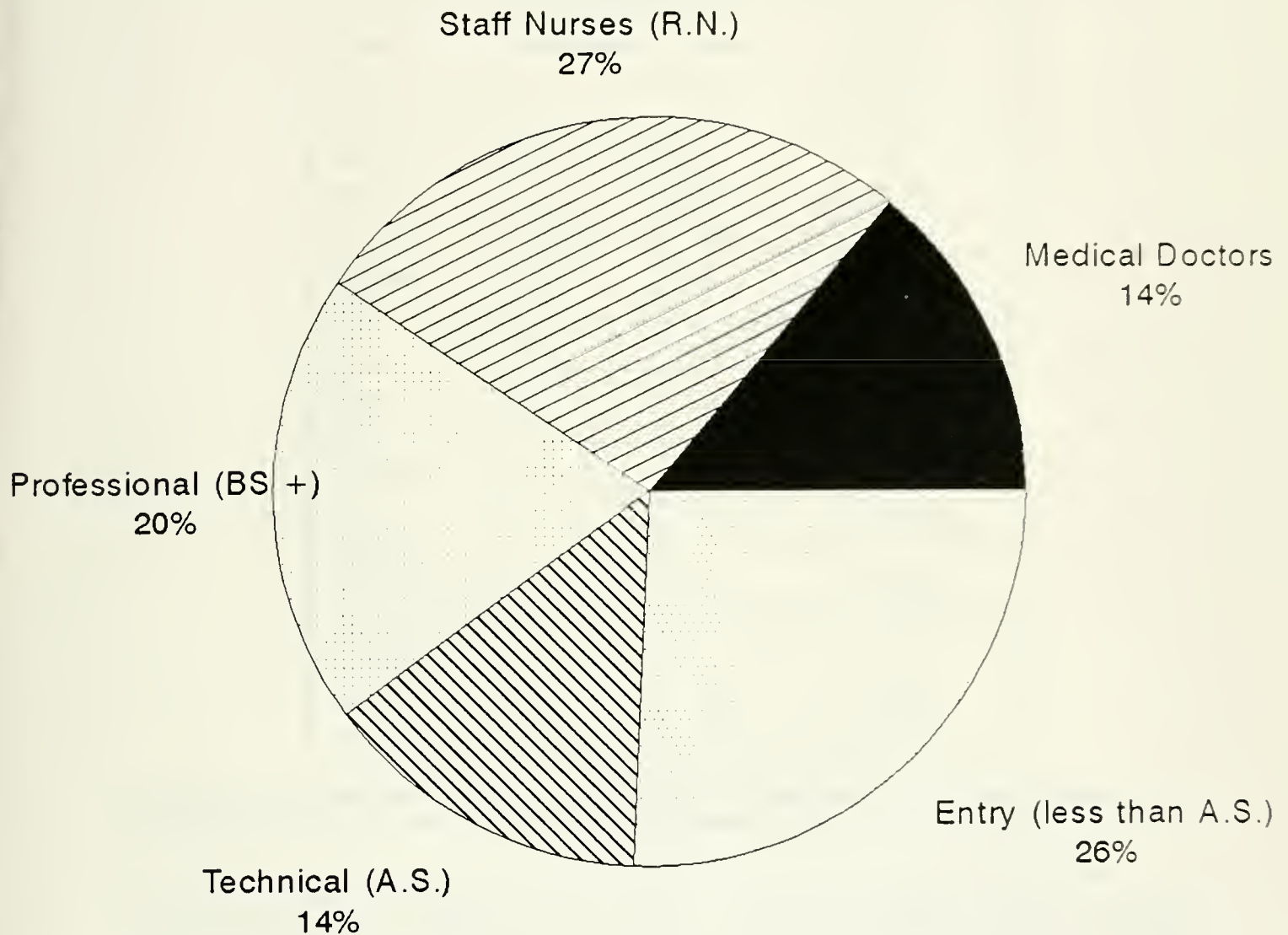
While four of these occupations require a bachelor's degree and only two require a technical background (associates level: ultrasonographer and radiologic tech), three of the bachelor's level occupations have an associated technical level occupation which could become a career step if training were designed to articulate into the professional occupation (physical therapy assistant, medical technician, occupational therapy assistant.)

The Structure of Employment

Boston hospitals are large organizations (mean employment of respondents 2,800, range 540-8,500) offering a rich variety of jobs suited to a range of levels of skill. One third of the jobs in hospitals require a bachelors degree or higher. Workers who have at least two years of technical training (staff nurses and technicians) comprise 40% of the work force, and workers in entry level careers (less than two years of technical training) represent one quarter of the workforce. Although licensing requirements for many technical careers limit the amount of career mobility that can be achieved without formal training, the overall structure of employment means there is significant advancement potential for entry level and technical workers who are able to acquire enough formal training to satisfy licensing requirements. (The actual ability of the system to provide this opportunity will be discussed in the training section of this paper.) The employment composition is outlined below:

<u>Employment Composition</u>	
Medical Doctors	13.93%
Staff Nurses (RN)	26.45%
Professional (BS+)	19.47%
Technical (A.S.)	14.16%
Entry (less than A.S.)	25.62%

Hospitals in Boston 1991



Employment Composition (% to Total)

Wages/Vacancies for Selected Occupations

To gain a greater understanding of entry level and technical careers in hospitals, particularly in positions which do not require a college degree, respondents were asked to provide more detailed information about selected job titles which human resources staff identified as being frequently in demand. The chart which follows summarizes their responses.

Boston Hospitals - Wages and Vacancy Rates for Selected Occupations			
Position	Employment	Vacancy Rate	Average Wage
EKG Tech	43	-0-	19,323
Ultrasonographer	41	12.19	35,776
Lab Tech	279	7.80	26,000
Radiology Tech	152	5.26	28,100
LPN	159	2.51	29,952
Patient Care	99	3.03	21,153
EEG Tech	31	3.22	28,880
Asst. to Nursing	732	.13	19,635
Dietary Aide	307	1.95	17,305
Pharmacy Technician	172	3.48	18,740
Phlebotomist	139	2.87	19,136

Despite the high average salary of \$35,776, ultrasonography experienced the highest vacancy rate and was the fourth most frequently cited occupation hospitals identified as experiencing shortages.

Licensed Practical Nurses (LPNs) were the second highest paid occupational group referenced in the survey, with an average wage of \$29,952. With 10-12 months of education required to obtain a license, this occupation represents a potential rung in the career ladder to become a registered nurse (2 years required). A number of employees decried the movement within the nursing profession to eliminate L.P.N. and replace them with a new, lower skilled category of nurse, the patient care technician. Employers felt that L.P.Ns provide an important level of skill and career step. The 30% wage differential above patient care technicians also makes the L.P.N. a better employment option for those who are able to obtain 10-12 months of required training.

Laboratory Technicians (average salary \$26,000, vacancy 7.88%) and Radiology Technicians (average salary \$28,100, vacancy 5.25%) are among the better paying hospital technical jobs, in which opportunity for advancement could be great for phlebotomists or other technicians.

When hospitals were asked what they considered to be the greatest impediments to career mobility in their workforce they cited inadequate educational preparation in English language, math, science, and other areas in more than half (57%) of their responses. The response displays the impact that the failure of the Boston Public Schools has on workers' lives and employers' needs for adequately prepared workers. English as a Second Language preparation which is rigorous enough to meet the demands of the workplace and remedial basic skills education must be combined with adequate family support as integral components of career ladder training programs designed for hospitals.

EMPLOYMENT PROFILE: LONG TERM CARE FACILITIES

Employment

Boston long term care facilities responding to the survey reported an employment level of 2,670, an estimated 48.72% of the total long term care employment in Boston. Boston residents fill some 75% of these jobs. Employment in these facilities is also noteworthy in that fully half of the administrator/executive directors managing these institutions are women.

Growth

Employment in responding long term care facilities grew by less than 1% in the last year and is expected to grow by less than 1% in the next two years. Facilities report a very tight fiscal climate with low levels of reimbursement for services as placing the industry under stress. While the growth of home care services have enabled many elders to live independently, the increasing proportion of our population which is over age 85 is expected to increase demand for these services.

Institutional Profile

Responding Boston nursing and rest homes are small institutions (average employment 90, median 68), serving a predominantly Medicaid dependent population. These facilities are generally for-profit institutions and are most often single facilities owned as family businesses. Twenty two percent of them are unionized shops. While some 170 beds in responding institutions are rest homes, 2,600 offer varying mixes of skilled care, including specialization in rehabilitation and mental retardation.

PROFILE

Single Facility	61.29%
Small Chain	3.22%
Large Chain	9.67%
Family Owned	19.35%
Unionized	22.58%

Medicaid Census

median, all facilities	84%
median, non-profits	75%

Intensity of Care

level 1-3	2,605 beds
level 4	170 beds

Supply

Shortage Occupations

As employers of smaller number of skilled workers, long term care facilities have been less impacted by shortages of qualified workers than hospitals. They report that the shortage of skilled nurses has eased

considerably, but express concern about whether the supply of professional nurses will meet future demand.

Observers note that long term care is regarded in the nursing profession as occupying lower status than acute care. They note that while nursing school curricula do address issues related to nursing in long term care settings, overall the level of knowledge that graduates have about long term care and the sociological issues involved in providing care in the home environment is not optimal. In addition reimbursement requirements demand extensive documentation by registered nurses which causes them to spend large portions of their time keeping records, rather than tending to patients. For many nurses who entered the profession to care for patients, documentation requirements make long term care a less desirable work setting than acute care.

Nursing homes also express concerns about nurses aides. New requirements stipulate that assistants to nursing be certified within four months of taking a job. Although facilities report that they have been able to meet this requirement for their current workforce by offering their own training programs or using a program offered by the Red Cross, they worry that the requirement will become a disincentive to hire workers who do not become certified prior to employment. Given a choice between hiring an already certified worker, sending one to the Red Cross to be trained for \$3900, or offering an in-house training program to an uneconomically small group of new hires, the pressure is clear. Full reimbursement for the cost of certification could eliminate the disincentive.

Reimbursement to institutions would also remove the barrier that individuals now face if they seek certification on their own. Most potential applicants for nurses aide positions are lower income people who are bound to find the cost of acquiring the training prohibitive. Further, many of these candidates require English as a Second Language instruction before they can succeed in the training program. In the absence of this reimbursement, the Neighborhood Jobs Trust is funding an Assistant to Nursing program through the Red Cross.

The other occupational category which nursing homes mention as tending to be in short supply is cooks. They note that applicants may have cooking experience, but they seldom have experience with therapeutic diets. A training program should be designed to address the needs of therapeutic settings as well as the needs of the hospitality industry and would give graduates the flexibility to work in either industry.

Organizational Issues

As most small organizations, long term care institutions do not have the internal resources that hospitals do to address labor force issues. While all facilities except one report that they offer in-house training programs, these programs are largely designed to meet mandates for continuing education, certification for nurses aides, and to provide orientation to new workers. Six respondents are able to offer tuition reimbursement to employees and eight offer paid release time from work to employees who need training required by their job. In addition one facility is able to offer scholarships and the Long Term Care Foundation offers 20 scholarships each year. Despite limited resources, nursing home operators express great support for the concept that through education their employees can improve their lives.

Structure of Employment

Long term care facilities in Boston are most often neighborhood based employers where employees walk to work and frequently work for a single facility for many years. It is not uncommon for more than one generation of a family to find employment in a particular institution.

Employment in long term care facilities is concentrated in occupations that do not require a college degree. The only permanent patient care position found in all responding institutions that requires a degree is Licensed Social Worker. Other occupations requiring degrees, including physical therapist, occupational

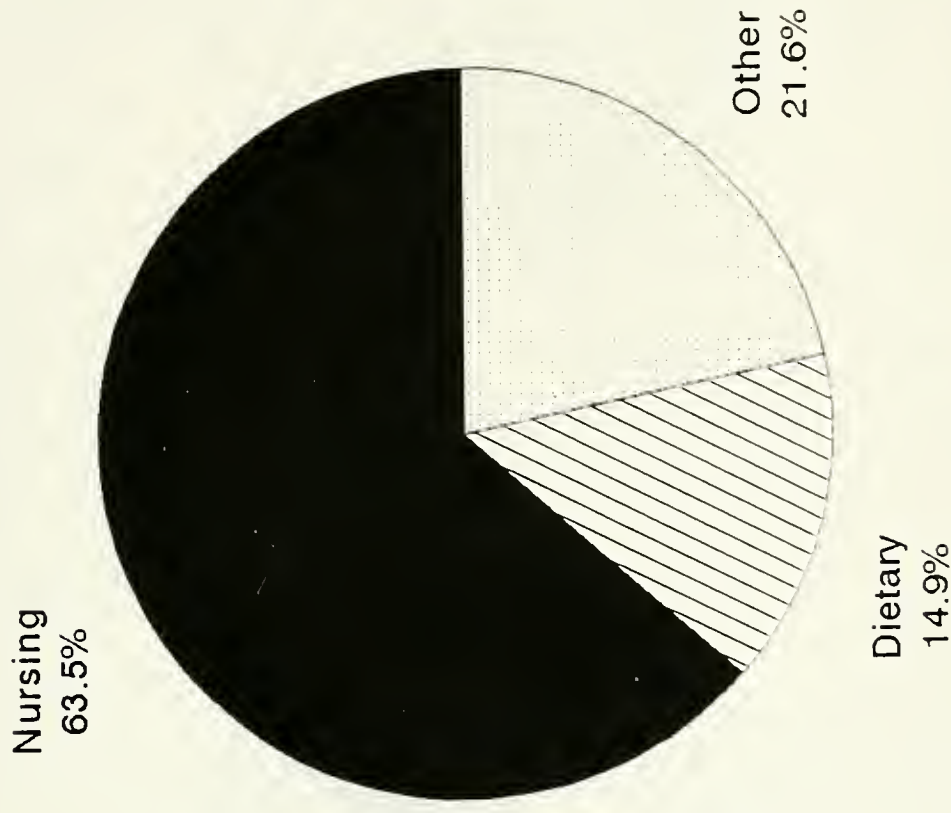
therapist, and dietitian, are typically available on a contractual basis for a limited number of hours per month (although these occupations are found in small numbers in large facilities).

The chart below shows that long term care employment is also heavily concentrated in two occupational areas: nursing (63%) and dietary (15%). While each of these occupational groups has an easily definable career path, through higher education and certification, the lower levels of the occupational structure comprise by far the greatest number of employees. This structure means that small numbers of employees will be able to progress along a career path within one facility. Many will have to find employment in other institutions as they progress. Fortunately, the size of Boston's medical sector is such that nurses will have the choice of pursuing options in acute or ambulatory care settings. Dietary employees could have the choice of moving to acute care settings or finding employment in Boston's large hotel and restaurant industry.

LONG TERM CARE EMPLOYMENT

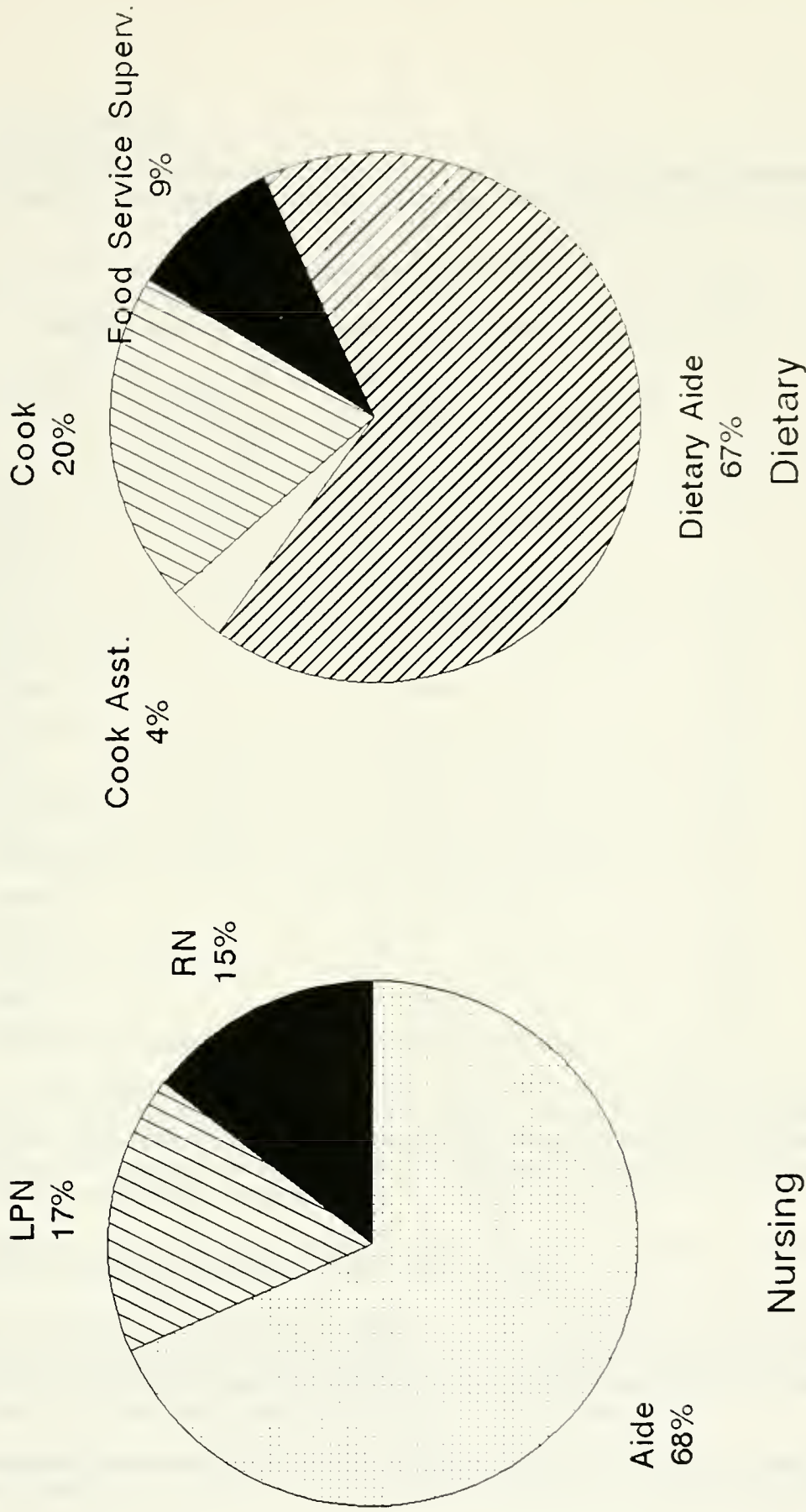
<u>Occupation</u>	<u>% Total Industry Employment</u>	<u>% Occupational Employment</u>
<u>Nursing</u>		
RN	1.40	14.50
LPN	10.93	17.23
Aide	43.30	68.26
<u>Dietary</u>		
Food Service Supervisor	9.20	9.40
Cook	3.03	20.20
Cook Assistant	.54	3.52
Dietary Aide	10.04	66.89
<u>Other</u>	21.58	N/A

Long Term Care in Boston 1991



Employment Distribution

Long-term Care Employment in Boston Occupational Distribution, 1991



Occupational Wage Comparisons

To understand more about the wage and training structure in long term care employment; institutions were asked to provide data for representative occupational categories. These data are displayed in the charts which follow.

Long Term Care - Wage Comparison for Selected Occupations			
Position	% Total Employment	Average Wage	% Hospital Wage
LPN	10.93	28,496	95
Asst. to Nursing	43.30	16,268	82
Medical Record Tech	.78	18,928	94
Dietary Supervisor	1.41	26,998	--
Cook	3.03	20,176	--
Cook Asst.	.52	16,411	--
Dietary Aide	10.04	14,789	85
Laundry/ House-keeping	--	15,516	--
Main-tenance	--	21,528	--

Overall, long term care facilities are low wage employers. Pay for the four positions for which data is available in hospital and long term care settings reveals that long term care pay runs from 5-17% less than hospital pay. With low wages and an organizational structure that makes advancement in an individual facility difficult to attain, this setting poses significant barriers to economic opportunity for workers. Low reimbursement levels for long term care prevent facilities from raising wages.

Assistants to nursing average 17% less than hospital wages. Clearly, career tracks into more skilled categories of nursing would benefit both workers and the industry at large.

Dietary workers in long term care settings also experience low wages. Comparison of wages for dietary aides in hospitals and long term care, show a 14% differential. It should be noted, however, that the training requirements of the two settings are substantially different, with hospital workers needing an associates degree as compared to no formal training required in the long term care environment.

Laundry and housekeeping workers also fall at the low end of the wage scale. To determine to what extent these workers see themselves as health care workers, and hence whether they might be interested in

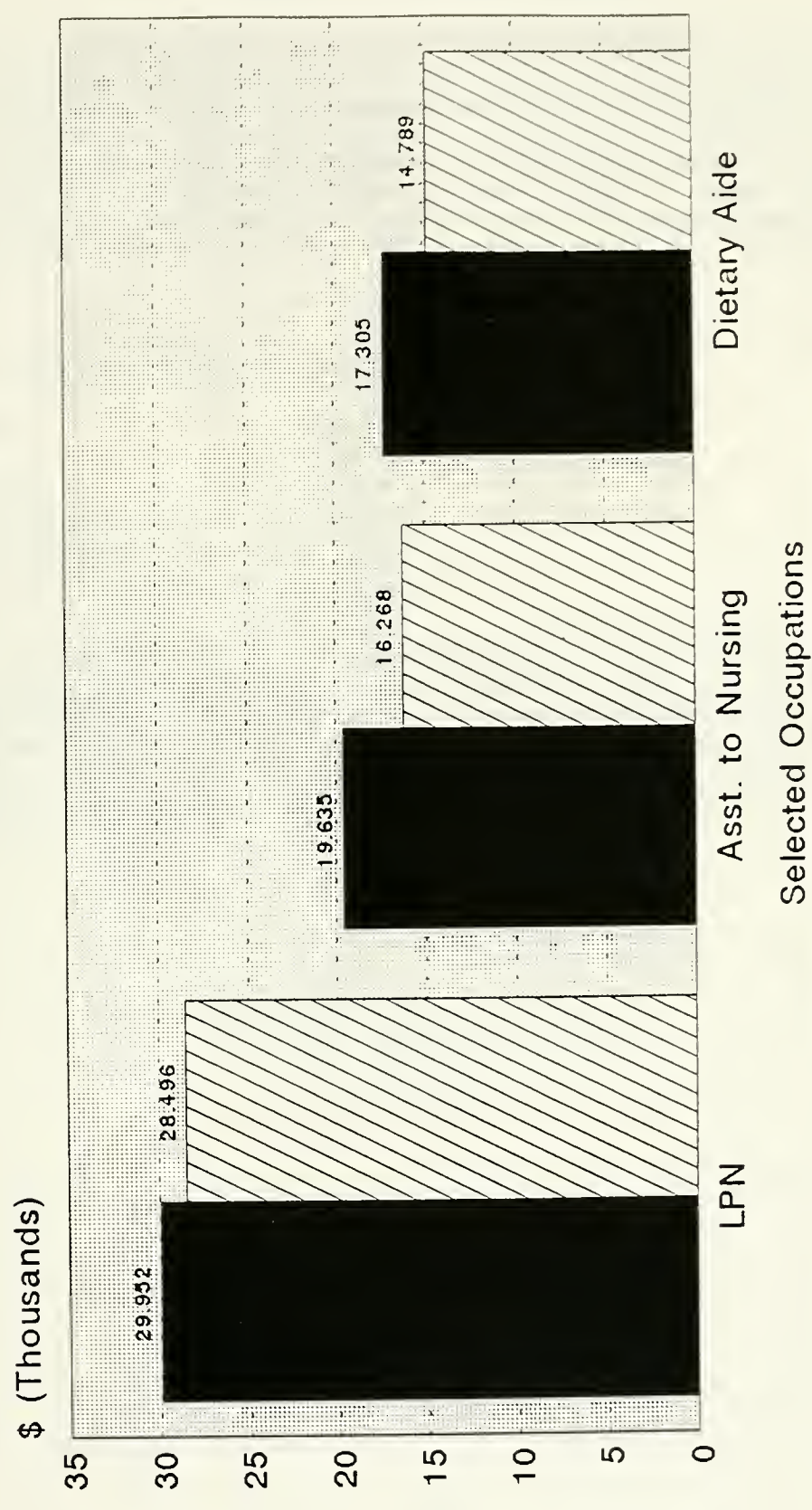
pursuing higher paying health care careers, nursing homes were asked whether laundry and housekeeping workers leave health care settings when they take other jobs. The sense was that there may be a pool of workers potentially interested in career paths in health care.

Nursing homes indicated that laundry and housekeeping workers are often new immigrants who have little command of English, often low levels of literacy in their native language, and little sense of confidence in their ability to advance. A number of employers cited safety problems that occur when workers can not read direction and labels. Career path programs designed for these workers must address these needs. It is possible that these workers would have better opportunity in a career track that provides entry to the hotel industry. The wages, training requirements, and career advancement potential in the hotel industry should be evaluated to see if this is the case.

Maintenance workers make somewhat higher wages than laundry and housekeeping workers and may have advancement opportunities in hospitals, which have more positions and require more specialized skills. In addition, offering prospective workers HVAC repair or boilermaker training would enhance wage and career prospects considerably within and outside the medical sector.

The importance of reimbursement systems which provide for an adequate wage base is underscored. Career ladder programs for long-term care facilities, considering their small size, may be more effectively developed in conjunction with other employer groups, such as acute health care and food services.

Wage Comparisons for Selected Occupations Boston Hospitals vs. Long-term Care Facilities



■ Hospitals ▨ Long-term Care Fac.

TRAINING FOR HEALTH CAREERS

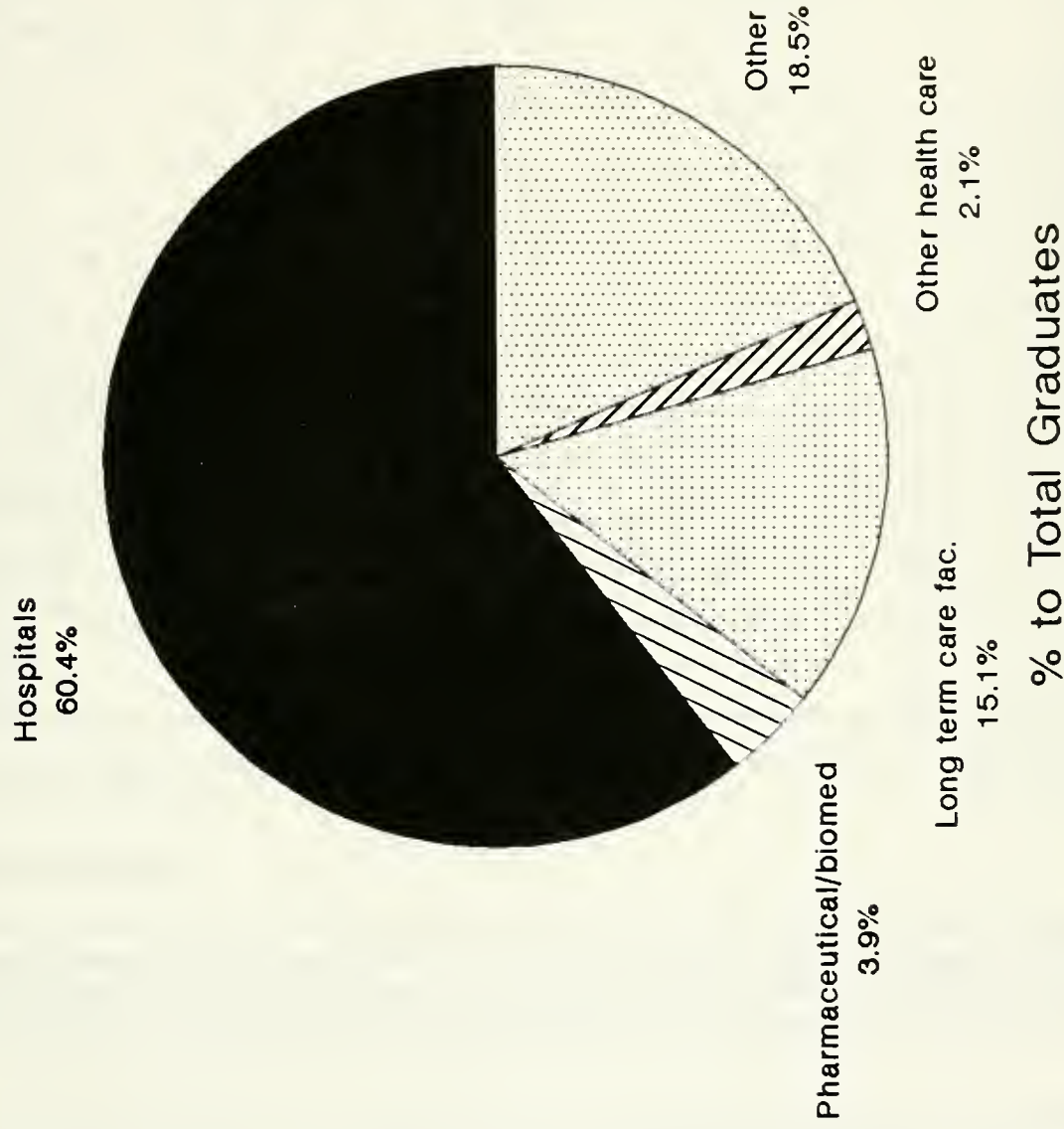
The availability of educational programs for health care professions has a major impact on the extent to which medical institutions have sufficient supply of skilled workers and on the ability of entry and technical workers to upgrade their skills. Preliminary analysis showed that nine educational institutions in the greater Boston area offer training in the entry and technical careers highlighted in this report. All nine institutions responded to questionnaires regarding their offerings. Of the 794 reported graduates, some 360, or 45% are Boston residents. Additional training is provided by in-house programs at hospitals. The questionnaires participating health care institutions filled out requested information on training programs offered internally. Hospitals report training 320 workers in 1991 in the occupations under study, for a total of 1,086 trained workers.

At the present time the graduates of educational programs are finding work mainly in hospitals and long term care. A profile of the job settings of graduates follows:

<u>Setting</u>	<u>%Total Graduates</u>
Hospitals	60.45
Long Term Care	15.11
Other Health Care	2.14
Pharmaceutical/Biomedical	3.87
Other	18.50

The chart on the following page compares the estimated current Boston employment level of the occupations under study with the 1990-1991 supply of graduates. The estimates of Boston employment levels by occupation are based on data collected by the Department of Employment and Training and by the Massachusetts Hospital Association. It should be noted that the training graduates serve the Boston health care labor market as well as the regional labor market, so the numbers in the chart underestimate demand. These numbers should be regarded as suggestive of relative supply and demand rather than absolute indicators.

Health Careers in Metro Boston Placement of Educational Institutions' Health Care Graduates



1991 Training Supply and Employer Demand for Selected Occupations				
Occupation	Education Institution Graduates	Hospital Graduates	Total Graduates	Estimated Current Employment
Radiology Tech	79	14	93	2115
EKG Tech	184	12	196	101
Ultrasound Tech	18	5	23	96
Lab Tech	8	6	14	711
Medical Records Tech	10	10	20	170
Assistant to Nursing	83	20	103	3571
LPNs	75	90	165	5790
Ancillary Care Provider	--	90	90	155
EEG Tech	10	35	45	73
Pharmacy Tech	20	55	75	405
CSR Tech	20	10	30	190
Phlebotomist	249	33	282	327
Dietary Aides	10	30	40	225
PT/OT Aides	--	--	--	200
Radiation Therapist	10	8	18	24

Keeping in mind the limitations of the data, a number of conclusions can be drawn about supply issues in the occupations under study.

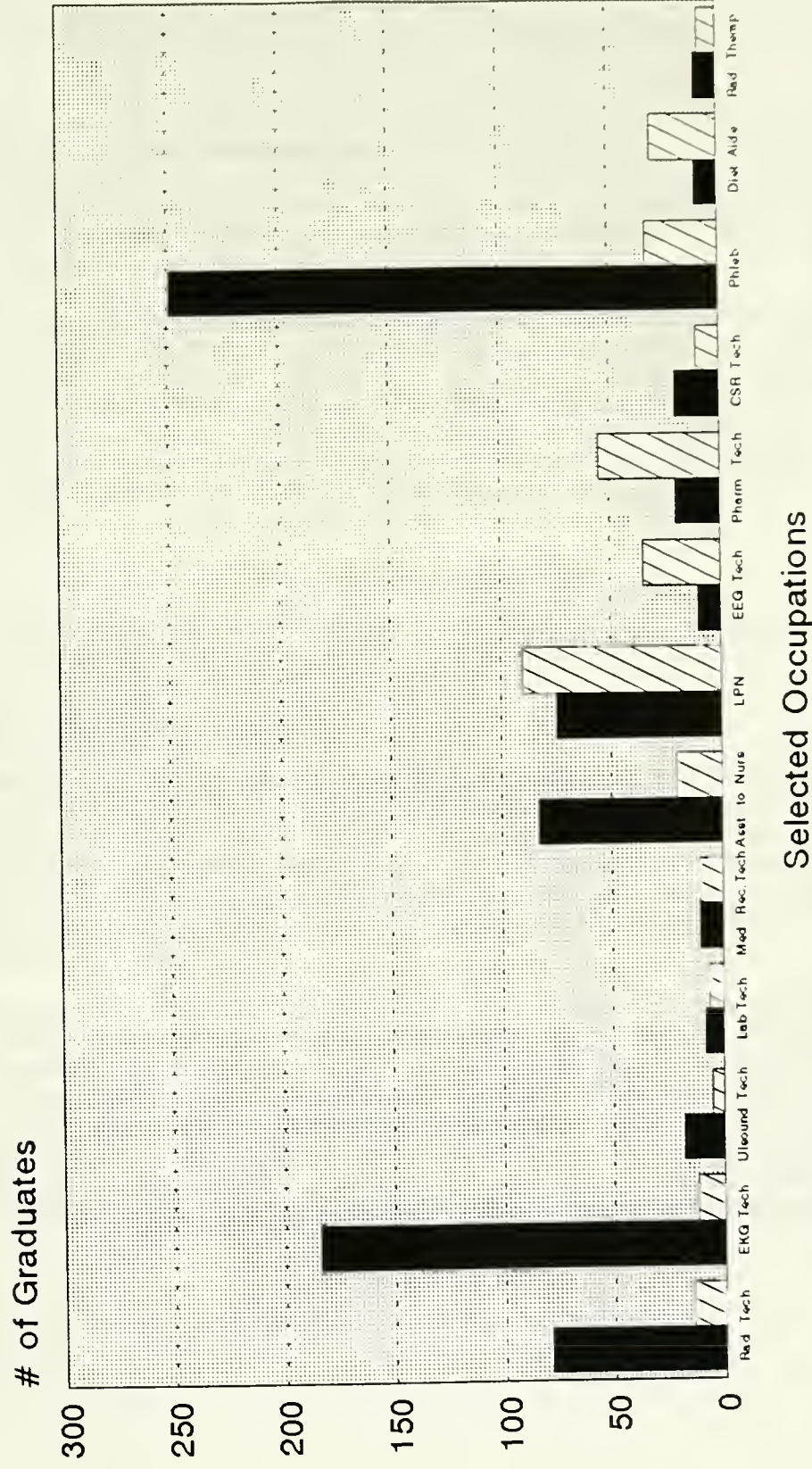
Diagnostic Technicians

Within this occupational category are radiology technicians, ultrasound technicians, and radiation therapists. The occupation with the highest vacancy rate, 12%, is ultrasound technicians (see chart page 8). Only five graduates of hospital based training programs were reported. Although Middlesex Community College reported 18 graduates, the Bedford location draws mainly suburban students, who may find suburban work locations more appealing than Boston.

A considerably greater number of radiology technicians are trained, (93) graduates. Some radiology technicians receive on the job training in medical settings; others have associates degrees. With a 5.26% vacancy rate for this occupation (chart page 8), there would appear to be reasonable balance between demand and supply. A joint certificate program that could more flexibly serve the need for

Training for Health Careers in Boston

(Supply of Graduates for Selected Occupations)



■ Education Institution ▨ Hospital

ultrasonographers and radiology technicians or other categories of radiologic technicians such as nuclear medicine therapists and radiation therapy technicians could help balance supply and demand in the broader occupational category. One hospital human resources manager noted that there is a program in the region that offers a B.S. in radiology technology, but that graduates perform the same tasks as A.S. Graduates.

Of all the occupations within the general category of diagnostic technicians, EKG technicians are graduated in the greatest numbers. With 196 regional graduates and an estimated 101 EKG technicians practicing in Boston institutions, supply appears to be quite large. In fact, responding hospitals reported a 0% vacancy rate. With training that can be done in less than one year of study, this represents an inexpensive program for institutions and students. However, this occupation pays close to \$9,000 less than other diagnostic technology occupations under study.

The supply of EEG technicians also appears to be large in relation to demand. However, with 35 to 45 total graduates being generated by Boston hospitals, it would appear that graduates can be absorbed. The fact that training for this occupation takes place primarily in hospitals would make it a logical career step for lower paid and lesser trained EKG technicians who are already hospital employees. With an average salary of \$28,880 this occupational step could present significant economic opportunity for participants. If remediation is needed to enable EKG technicians to qualify for training, collaboration with community colleges could be designed. Program design will also need to reflect the family responsibilities of participants.

Multiple Certification Career Path

EKG Technician-----EEG Technician Radiology-----Ultrasonographer Technician

Laboratory and Related Occupations

Regional institutions reported graduating 14 laboratory technicians (two year training program), a figure which represents only 1.97% of the current estimate of Boston employment, and which suggests a need for more graduates. While specific data on medical technologists (B.S. level of training) was not collected, it should be noted that this occupation was the second most commonly cited by hospitals as experiencing shortages. A career ladder program expressly designed for practicing laboratory technicians who wish to become laboratory technologists could provide career mobility and alleviate the shortage if the training slots for lab technicians were also increased.

While the data suggest a shortage of graduates in the more skilled laboratory related occupations, they suggest an oversupply of training for entry level workers, phlebotomists and CSR technicians. The Boston system graduated 282 phlebotomy graduates as compared to an estimated 327 hospital jobs. Although the oversupply is exaggerated by the lack of data on phlebotomists practicing in out-patient settings, it should be noted that medical assistants in physicians offices often perform this function as part of their duties. A total of 30 CSR technicians were trained as compared to an estimated 190 city-wide jobs, or close to 16% of total employment. A likely career progression would be to train CSR technicians and phlebotomists to be laboratory technicians and upgrade laboratory technicians to be laboratory technologists.

Sequential Career Path

CSR Technician}-----Laboratory Technician-----Laboratory Technologist

Phlebotomist}

Nursing and Related Occupations

According to national data collected by the Bureau of Labor Statistics, the demand for Licensed Practical Nurses decreased during the 1980's as changes in medical practice caused hospitals to serve more intensively sick patients requiring the care of registered nurses. The creation of a new, lower skilled category of nurses, the patient care technician, is also expected to erode demand for LPN's (it should be noted that in conversations with human resources staff and nursing educators EDIC did not find great support for the creation of this nursing occupation.) Despite these trends, LPNs remain an important part of Boston's hospital work force with an estimated 5,790 practicing in inpatient and outpatient settings across the city, and represent one of the better paying categories of technical jobs. This year's LPN graduates represent 2.85% of total estimated employment across all medical settings. Compared to the hospital vacancy rate of 2.5% for this occupation (chart page 4), this could represent equilibrium. However, the pool of graduates must serve the regional medical community, so it probably represents some level of undersupply.

Although patient care technicians (PCTs) are perceived to be a new lower skilled category of nursing that will undermine the demand of LPNs, only 155 patient care technicians are estimated to be practicing in Boston institutions. Only one of the ten reporting hospitals actually employs this category of worker. Despite the small numbers of patient care technicians in local institutions, 90 graduates are reported to have been trained this year, some 58% of the total workforce. It remains to be seen whether this large supply represents a response to long-term demand for a new category of worker or an oversupply.

While formal training is not necessarily required of assistants to nursing (with the exception of nursing homes), the ratio of graduates to total employment is roughly 2.88%, roughly the same for LPNs. Given the low wages and skill level of assistants to nursing and the strong demand for registered nurses, training programs which recognize the family support needs of assistants to nursing and which provide English as a Second Language instruction could fill this need and dramatically improve the economic status of the many dedicated men and women who fill these jobs.

Sequential Career Ladder

Assistant to Nursing}-----Licensed Practical Nurse-----Registered Nurse
Patient Care Technician}

Other Occupations

Dietary. The supply of dietary aides graduating from training programs appear to be quite large in relation to employment, 17.78% of the estimated total. (it is assumed that hospitals and long term care facilities are the primary employers of this occupational group, rather than out-patient settings). When the fact that dietary aides in nursing homes generally are not required to have formal training is considered, the oversupply appears to be even larger. This possible oversupply may help to explain why wages are so low in comparison to other technical occupations. With such low wages it is hard to view the return on investment for students who acquire an A.S. degree as adequate. Becoming a certified dietician could be a path to better wages for some dietary aides, but the only program in Boston which offers this four year degree is a relatively expensive private college serving students in the traditional age group. It may be more realistic for dietary aides to advance themselves through the career ladders to other occupations such as nursing, laboratory, or radiologic technology, unless a reasonably priced evening program geared to career advancement for dietary aides is developed.

The nursing home survey identified a need for cooks who have training in therapeutic diets. The 90 hour certification course for Dietary Supervisors offers some possibility of advancement for those who do choose cooking. Career paths which cross into the hospitality industry may represent greater possibility for

advancement than paths focused exclusively on health care. More detailed study of occupations, mobility and wages in the hospitality industry should be undertaken to see whether higher wages and greater mobility can be achieved.

Multi-Industry Career Ladder

Hospitality Food Service Work

Dietary Aide-----Dietary Aide Hospital-----Registered Dietician
(Long Term Care)

Cook----Food Service Supervisor----Hospitality Food Service Management

Physical Therapy Aides and Occupational Therapy Aides

Although several training institutions in the metro region offer A.S. degrees for PT or OT assistants, only one of them is within reasonable travel time from Boston on public transportation, which may explain why nursing homes consider the supply of trained PT and OT assistants to be virtually negligible. Two private Boston universities offer B.S. degrees, but their students are from the traditional college age group and frequently leave the state after receiving their training, creating a shortage of bachelors level workers in Boston. A Boston-based A.S. program which articulates into an evening bachelor's program could alleviate this shortage.

MISSING RUNGS IN THE CAREER LADDER

Despite expected growth in demand for mid-level and professional health care workers, a favorable occupational structure for career mobility within hospitals, and the possibility of creating career links between long term care institutions and hospitals, the potential to advance the careers of the current entry and mid-level health care workforce remains largely untapped. Because this potential has not been fulfilled, a mismatch exists between the needs of health care institutions for skilled workers and the skills which training program graduates are bringing to the workforce. When the recession ends and health care turnover rates rise, the mismatch can be expected to worsen. This mismatch takes several forms:

- The bulk of graduates in careers under study were for entry level jobs requiring low levels of skill, whereas the greatest levels of unmet demand appear to be for mid-level and professional workers.
- While several training programs offer courses oriented to enable workers at one level to achieve the next level of professional status, the overall orientation of the system is not towards sequential advancement. This means that the many workers with the potential to meet the demand for mid-level skilled positions such as laboratory technicians and ultrasonographers are unable to do so. (Bunker Hill Community College offers the LPN to RN upgrade program and Massachusetts College of Pharmacy and Allied Health offers an RN to Bachelors in Nursing upgrade program. Both Bunker Hill and Laboure offer programs that allow dietary workers to upgrade themselves to supervisory positions.)
- Great need exists for remedial education programs for current health care workers that will allow them to undertake studies at the associates degree level. When asked what they felt were the greatest impediments to advancement both employers and educational institutions cited inadequate academic preparation most frequently. A number of employers noted in interviews that English as a Second Language programs provided by local community based organizations do not provide a level of rigor which allows graduates to function effectively in the work place. (It should be noted that Bunker Hill Community College has recognized this need and offers an ESL Phlebotomist program and a Clinical Assistant program which can accommodate ESL students).
- The lack of articulation becomes even more severe at the four year college level. Despite the numerical decline in the traditional college age population, these institutions have not seized the opportunity to serve the needs of the many health care workers who could enter evening programs to prepare to become laboratory technologists, bachelors level nurses, physical therapists and occupational therapists. There is no public four year institution in Boston which offers training in the allied health care field, despite the access for non-traditional students which could be provided by the lower tuition.
- Employers and educational institutions concurred that inadequate family support including day care was the second most significant barrier to advancement. For non-traditional students, adequate family support can be the critical link which allows them to participate in further education.
- Despite several school-hospital partnerships, very few Boston Public School graduates enter the health professions. Since 1978, only 1% of the Boston Public School graduates have entered health care professions.

Education and training institutions face institutional barriers that limit their ability to respond to the needs identified by the study. These barriers include:

- Training institutions report their efforts to meet the demand for skilled workers are hindered by inadequate information about need, difficulty obtaining clinical placements for students in training, and low payment for some categories of workers.
- Funding cuts at community colleges limit their capacity to provide non-degree continuing education programs, as colleges no longer have the resources to subsidize these programs.
- While responding institutions report a variety of part time and evening course offerings, only two of them provide day care.

Hospitals and long term care facilities express support for the career aspirations of their workers but have not realized the potential to allow large numbers of employees to progress up the career ladder. Unresolved issues include:

- The long term care institutions typically have limited resources to devote to training and a small number of positions which can be occupied by career ladder workers.
- In non-recessionary times Boston's health care sector is characterized by high turnover levels. For career ladder programs to work, the organizational issues such as high stress, low wages in some occupations, and rigid shifts need to be evaluated.
- Although the culture of medical institutions in Boston is supportive of education, medical facilities do not have extensive experience developing the remedial education and family support programs needed for career ladder programs to succeed on a large scale.
- Communication and collaboration between medical institutions and educational institutions take place on a one to one basis but not on an overall level that allows for the creation of a coherent system to address training needs.
- Additional resources will be needed to support a career ladder for health care workers. In hospital settings this may mean shifting resources out of recruitment and advertising and into training. In long term care settings resources may need to be identified from outside, or factored into reimbursement.

APPENDIX

EDIC'S INVESTMENT IN TRAINING RESIDENTS FOR HEALTH CAREERS

FUNDING SOURCES:	STUDENTS: MINIMUM JOBS:			Per Student Per Job	
Department of Medical Services (DMS)	\$1,119,974	569	540 (a)	\$1,968	\$2,074
Job Training and Partnership Act (JTPA)	\$325,627	90	70	\$3,618	\$4,652
Department of Public Welfare (JOBS)	\$384,519	115	82	\$3,344	\$4,689
Neighborhood Jobs Trust (NJT)	\$169,924	108	76 (a)	\$1,573	\$2,248
TOTAL	\$2,000,044	882	768	\$2,268	\$2,606

(a) a number of these jobs are upgrading

**EDIC FY 92 PROGRAM DESCRIPTIONS:
HEALTH CARE**

DEPARTMENT OF MEDICAL SECURITY/LABOR SHORTAGE INITIATIVE

ROUND II, FY'92

BUNKER HILL COMMUNITY COLLEGE, ALLIED HEALTH CERTIFICATE PROGRAM, SEPTEMBER, 1991 - AUGUST, 1992, \$79,269 This two semester program will train thirty (30) students who are low income, underemployed limited English or native speakers for entry level health care positions. Each student will earn 12-15 college credits, will complete a 120-hour internship at a local health care facility and will be CPR certified.

BUNKER HILL COMMUNITY COLLEGE, LICENSED PRACTICAL NURSE UPGRADE TO REGISTERED NURSE, JANUARY, 1992 - DECEMBER, 1992, \$100,000 This is a four semester part time evening program offered to twenty-nine Practical Nurses, most of whom are employed at local hospitals. This is a collaborative effort with Veterans' Administration, Central, Boston City Hospital, and Mt. Auburn Hospital to provide the educational and clinical experience needed to allow these students to take the Massachusetts State Board of Nursing exam and thus upgrade their positions.

BUNKER HILL COMMUNITY COLLEGE, RADIOGRAPHY PROGRAM, SEPTEMBER, 1991 - AUGUST, 1992, \$60,000 There are nineteen part-time evening students who are underemployed and desire to become Radiographic Technologists in this program which collaborates with Massachusetts General Hospital, Veterans' Administration, Brigham and Women's Hospital, New England Medical Center, New England Baptist Hospital and Beth Israel hospital to provide the educational experience and twenty-eight week clinical experience in Radiology departments necessary to prepare these students for the National Board exams in 1993.

BETH ISRAEL HOSPITAL, "CHOOSE NURSING IN THE NINETIES!" PROGRAM, JULY, 1991 - JUNE, 1992, \$126,045 (leverages an additional \$100,851) This program targets disadvantaged high school juniors and seniors from Boston's inner city who are interested in a career in nursing. BI collaborates with the ODWIN Learning Center in Dorchester to provide necessary remediation for one to two years so that these youngsters can compete for spots in college nursing schools. The students complete more than 500 hours of clinical training under the tutelage of Beth Israel's finest professional nurse mentors.

BETH ISRAEL HOSPITAL, ESL/MULTICULTURAL PROGRAM, SEPTEMBER, 1991 - AUGUST, 1992, \$75,846. (leverages an additional \$47,000) This is an ambitious multi-tiered project that collaborates with Jewish Vocational Services to provide on-site ESL instruction for

58 employees which focuses on basic job skills, job awareness and continuing language instruction. Another collaboration with Continuing Education Institute will provide instruction to six employees in order to earn a high school diploma this year and each will receive personal career counseling from BI's Human Resource Department with the aim of upgrading job position. Lastly, ten lower level employees will be selected for an "internal sabbatical" of ten weeks to learn about a job in which they are interested.

BOSTON PUBLIC SCHOOLS/ST. ELIZABETH'S HOSPITAL COLLABORATIVE, HEALTH EDUCATION AND CAREERS NETWORK PROGRAM, JULY, 1991 - JUNE, 1992, \$164,698. (leverages an additional \$48,000) This collaborative targets 50 Boston High School students, and mixes regular and special education students. At least ten of these students will earn a certificate in the Nursing Assistant program at St. Elizabeth's for which they are paid a stipend during their clinical work. Every student gets special counseling, health education classes, travel training and world of work courses. Twenty-five of these students will receive courses at the ODWIN Learning Center and Aquinas College which will help prepare them for college and/or health career training.

BRIGHAM AND WOMEN'S HOSPITAL, FOREIGN TRAINED MEDICAL CREDENTIALING STUDY, NOVEMBER, 1991 - OCTOBER, 1992 \$63,870 (leverages an additional \$14,364) This is basically a research project which in collaboration with World Education and La Alianza Hispana, will document certification requirements in four labor shortage areas: Radiology, Medical Laboratory, Respiratory and Pharmacy. This grant provides the counseling of eight in-house foreign trained clients for whom this research will design the credentials evaluation process. This research could effect clients nationwide.

BOSTON UNIVERSITY SCHOOL OF PUBLIC HEALTH, HIV EDUCATION PROGRAM, JANUARY, 1992 - DECEMBER, 1992, \$24,600 (leverages an additional \$18,680) This grant targets thirty local health care employees who are individuals of color and have a desire to take this Aids and Substance Abuse education certificate back to their communities where they will teach the subject to community residents. The education is an intensive 120 hours long and requires a major committment on the part of the student. This grant will also provide child care money for these students who need this form of assistance.

CHILDREN'S HOSPITAL/FENWAY MIDDLE COLLEGE HIGH SCHOOL COLLABORATIVE, JULY, 1991 - JUNE, 1992. \$109,938 (leverages an additional \$150,000)

This nationally recognised school to work transition collaborative offers the combination of academics and paid vocational experiences in the health career field to Boston students in an alternative high school setting. A Personal Career Development course has been designed, full time internships at Children's hospital using individual professional

mentors and support services to each student make this one of the most successful such programs in our country. Summer jobs and full time jobs after graduation, and applications to higher ed are the goals for these thirty 'at-risk' Boston students.

NEW ENGLAND DEACONESS HOSPITAL, SUPERVISORS AND MANAGEMENT DIVERSITY TRAINING, JULY, 1991-JUNE, 1992. \$10,000 (leverages an additional \$5,500)

The Human Resources Department of Deaconess has collaborated with Affirmative Management Specialists, a new minority owned training and consulting firm to provide six, half day workshops for more than 300 management personnel within the hospital designed to promote sensitivity to multicultural employees and more effective human relations and supervisory skills.

DIMOCK COMMUNITY HEALTH CENTER, HISTOLOGY TECHNICIAN TRAINING, OCTOBER, 1991 - SEPTEMBER, 1992 \$84,085 (leverages an additional: \$48,480)

This well established community organization in collaboration with Aquinas Junior College in Newton will train 12 low income, underemployed or unemployed Boston residents to become Histology techs during this year's intensive study and internships. These students will be prepared to take jobs in local acute care hospitals.

JOBS FOR YOUTH, HEALTH CARE FUTURES PROGRAM, JANUARY, 1992 - DECEMBER, 1992 \$67,283

Sixty Boston unemployed residents, the majority of whom will be male and of color, are to have a six week intensive classroom experience which will prepare them to enter local acute hospitals in entry level positions. The finest part of this program is the collaboration with local hospitals which will assist Jobs for Youth in procuring the jobs and will permit JFY to intensely follow these students during their first months on the job which should help these clients stay on the job and realize success in the working world.

NEW ENGLAND MEDICAL CENTER, DISABILITY PROGRAM, NOVEMBER, 1991-OCTOBER, 1992 \$71,379 (leverages an additional \$31,000)

This program to serve 24 handicapped adults who need special help in getting ahead in health careers in which they are employed but in many cases, underemployed. All clients will have major disabilities and very special needs for equipment and help in meeting their education goals. Four clients will be trained as Medical Technologists in the laboratory area of choice and will be paid full salaries from this grant.

**JTPA & DPW/JOBS FUNDED HEALTH PROGRAMS
FY92**

ACTION FOR BOSTON COMMUNITY DEVELOPMENT, MEDICAL SECRETARY Training, AUGUST 1991 - MARCH 1992, (JTPA); 27 Students; 19 Job Placements \$96,900.00

Training in keyboarding, and medical terminology and skills. Also provides on-going classes in English as a communication skill.

AMERICAN RED CROSS, NURSING ASSISTANT Training, APRIL 1992 - MAY 1992, (DPW/JOBS) 54 Students: 38 Job Placements \$149,834.00
Life skills, occupational skills and job skills are taught during six-week training cycle. Counseling is provided throughout the program. Participant must be able to pass reading comprehension test and communicate in English, and possess a desire to work with the elderly.

AQUINAS COLLEGE AT NEWTON, MEDICAL ASSISTING TECHNICIAN, JANUARY 1992 - JUNE 1992, (DPW/JOBS) 16 Students; 11 Job Placements \$33,765.00

This program targets 16 Mass Jobs registered students. Its 22 week training program includes course work in medical administrative procedures, keyboarding, computer literacy, medical insurance billing, phlebotomy, EKG assisting, blood pressure testing, urinalysis and preparing people for physical examinations. Entrance requirements - GED, 9th grade reading and math level.

BOSTON TECHNICAL CENTER, MEDICAL SECRETARY Training, OCTOBER 1991 - MARCH 1992, (JTPA) 20 Students; 14 Job Placements \$77,000.00, (DPW/JOBS) 8 Students; 6 Job Placements \$40,800.00

Training in Business English communications, typing, word processing, office procedures, transcription, medical terminology. Counseling, career, workshops and placement are also provided. Graduates are eligible for up to 24 credits applicable to an Associates Degree.

BUNKER HILL COMMUNITY COLLEGE, ALLIED HEALTH CERTIFICATE PROGRAM, SEPTEMBER 1991 - MAY 1992 & JANUARY 1992 - AUGUST 1992, (JTPA) 15 Students; 11 Job Placements, \$41,727.00

This two semester program will train students for a variety of entry-level health care positions and/or prepare them for other health care programs. Students receive a certificate upon completion and 24 college credits which are transferable.

DIMOCK COMMUNITY HEALTH CENTER, SURGICAL TECHNICIAN, JULY 1991 - JULY 1992, (JTPA) 8 Students; 6 Job Placements, \$33,000.00,
Surgically Techs work principally in the operating room, performing functions and tasks that provide a safe environment for the surgical patient. Support the surgeons, nurses, and other team members involved in operative procedures. The

training is 44 weeks in length, and is divided into two sections: (1) 28 weeks of didactic and clinical instruction; (2) 16 weeks of supervised clinical experience in the operating rooms.

JEWISH VOCATIONAL SERVICE, MEDICAL SECRETARY, DECEMBER 1991 - APRIL 1992, (DPW/JOBS) 32 Students; 22 Job Placements \$105,600.00, Program offers an intensive hands-on office skills course that encompasses an introduction to personal computer (PC) structure and use, keyboarding exercises, word processing, office and secretarial skills. Clients receive 320 hours of skills instruction which includes an eight week medical terminology component to be offered at variety of potential employment sites.

JOBS FOR YOUTH, INC., BIO-MEDICAL CAREERS, OCTOBER 1992 - MAY 8, 1992, (JTPA) 20 Students; 14 Job Placements, \$77,000.00, Program consist of one 28 to 32 week cycle during which trainees will learn basic academic skills, medical terminology, computer literacy, and hands-on laboratory techniques needed for entry-level jobs in the biomedical and biotechnical industries.

ONE WITH ONE, HEALTH CAREERS, OCTOBER 1991 - MAY 1992, (DPW/JOBS) 5 Students; 5 Job Placements, \$19,320.00, Five linguistic minority students enrolled in this program are trained to develop the skills needed to begin a career in the health care field. The program integrates intensive instruction in ESL and health sciences with business skills training (typing, word processing, data entry, etc.). Areas covered include body systems, disease, nutrition, medical assisting skills, and medical terminology.

NEIGHBORHOOD JOBS TRUST HEALTH TRAINING PROGRAMS

ENGLISH AS A WORKING LANGUAGE, 24 STUDENTS, \$15,000
The Faulkner Hospital, Hebrew Rehabilitation Center, and Jewish Vocational Services have joined to provide 24 limited English speaking employees with the language skills necessary to excael on the job and advance in their careers.

TRAINING THE RESOURCES OF YOUTH, 28 STUDENTS, \$58,884
This collaboration between Boston Area Health Education Center, Brighton High and Boston City Hospital allows 28 at risk BPS students to explore careers in the health field while receiving accelerated instruction in English, math and the sciences. Students also are assisted in applying to college or training programs or securing full time positions upon graduation.

PROJECT STEP-UP, 26 EMPLOYEES, \$35,026
Brigham & Women's has joined with World Education to create a career path for entry level hospital employees by offering the academic remediation needed for advanced technical training and promotion to positions such as pharmacy, radiology, respiratory and medical lab technicians.

FATHERS IN TRAINING, 6 Students, \$18,714

The American Red Cross and Fathers Inc have formed a partnership with four nursing homes to train 6 young fathers in the skills necessary to become full time nursing assistants. Graduates will enter fulltime employment at one of the participating health care facilities.

PROJECT RECOVERY, 24 Students, \$42,300

Veterans Benefit Clearinghouse and Dimock will work in partnership with Harvard Community Health Plan to prepare 24 veterans or their family members with the skills needed for employment as full time phlebotomists and medical lab assistants.

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HISTORICAL TREND IN STATE MAINTENANCE ALLOCATION TO INSTITUTIONS (less Health & Welfare)

	FY 1985 ALLOCATION	FY 1986 ALLOCATION	FY 1987 ALLOCATION	FY 1988 ALLOCATION	FY 89 ALLOCATION	FY 1990 ALLOCATION	FY 1991 ALLOCATION	FY 1992 ALLOCATION	FY 1985 - FY 1992 DOLLARS LOST	%
BRIDGEWATER	14,620,692	18,464,635	18,693,963	19,096,066	21,423,729	20,243,667	17,230,567	14,544,426	-4,551,640	-24%
FITCHBURG	12,209,399	15,270,499	15,494,831	15,918,998	18,043,088	17,189,898	14,625,851	12,345,769	-3,573,229	-22%
FRAMINGHAM	9,835,428	12,163,497	12,523,008	12,764,706	14,289,527	13,613,829	11,567,735	9,764,394	-3,000,312	-24%
NORTH ADAMS	6,611,792	8,201,771	8,490,125	8,677,476	9,822,208	9,357,753	7,818,617	6,599,741	-2,077,735	-24%
SALEM	15,179,779	19,065,487	19,308,969	19,720,870	22,403,022	21,343,667	18,167,802	15,335,551	-4,385,319	-22%
WESTFIELD	9,979,238	12,300,031	12,339,905	12,559,539	14,355,531	13,676,712	11,435,323	9,652,625	-2,906,916	-23%
WORCESTER	9,553,130	12,264,005	12,527,123	12,703,404	14,265,439	13,590,880	11,472,143	9,683,705	-3,019,699	-24%
MASS ART	7,056,013	7,963,946	8,202,321	8,513,668	9,525,653	9,075,221	7,621,948	6,433,732	-2,079,936	-24%
MASS MARITIME	6,919,687	8,512,569	8,403,312	8,361,067	8,902,454	8,481,490	7,079,552	5,975,893	-2,345,174	-29%
STATE COLLEGES	91,965,158	114,206,440	115,983,557	118,315,794	133,030,651	126,573,117	107,019,538	90,335,836	-27,979,956	-24%
PRESIDENT'S OFFICE	502,607	634,908	636,131	632,662	711,684	378,422	274,457	239,597	-393,065	-62%
IGS	328,863	386,071	387,244	366,311	401,343	360,000	301,765	266,501	-99,810	-27%
AMHERST	119,660,534	146,200,917	149,832,859	161,874,517	164,012,006	154,323,148	128,186,263	112,213,191	-49,661,326	-31%
BOSTON	42,725,805	51,534,219	52,750,000	59,174,316	62,163,129	57,063,984	47,445,516	41,439,893	-17,736,423	-30%
DARTMOUTH	21,483,009	27,665,182	28,743,028	29,863,613	32,968,788	31,597,653	26,450,742	23,107,493	-6,756,120	-23%
LOWELL	34,563,546	44,004,994	47,354,196	50,621,945	53,718,428	50,523,536	41,954,976	36,797,121	-13,824,824	-27%
MEDICAL CENTER	22,815,269	26,456,559	28,206,910	28,956,545	30,339,037	28,546,786	23,735,522	20,811,085	-8,145,460	-28%
UNIVERSITY	262,079,633	296,882,850	307,910,368	331,489,909	344,314,415	322,793,529	268,349,241	236,874,881	-96,615,028	-29%
BERKSHIRE	4,999,652	6,210,640	6,414,125	6,541,216	7,385,929	7,036,676	6,078,676	5,157,913	-1,383,301	-21%
BRISTOL	5,871,974	7,321,661	7,723,975	7,836,051	8,738,542	8,325,329	7,229,201	6,133,962	-1,702,089	-22%
BUNKER HILL	6,818,115	8,798,175	9,156,357	9,540,166	10,681,931	10,176,822	8,836,922	7,498,109	-2,042,057	-21%
CAPE COD	4,909,543	6,110,818	6,189,556	6,242,800	6,979,566	6,649,528	5,827,431	4,944,563	-1,295,237	-21%
GREENFIELD	4,136,420	5,144,798	5,218,599	5,306,654	5,941,309	5,660,367	4,868,960	4,148,272	-1,158,382	-22%
HOLYOKE	7,037,579	8,938,205	9,214,780	9,598,214	10,664,843	10,160,542	8,784,101	7,453,291	-2,144,923	-22%
MASSASOIT	7,078,467	9,045,687	12,402,007	12,534,418	13,814,431	13,161,199	11,369,766	9,647,222	-2,887,199	-21%
MASS BAY	4,674,252	6,140,453	6,276,632	6,448,251	7,255,589	6,912,499	6,033,168	5,119,131	-1,329,120	-21%
MIDDLESEX	5,939,315	7,590,872	7,971,533	7,989,903	12,189,268	11,612,883	10,032,201	8,512,502	-522,399	-7%
MT. WACHUSETT	4,723,228	5,815,791	5,974,125	6,168,081	6,811,983	6,489,869	5,606,498	4,757,102	-1,410,979	-21%
NORTHERN ESSEX	7,457,651	9,607,532	9,816,990	10,274,588	11,596,771	11,048,403	9,593,749	8,140,276	-2,134,312	-21%
NORTH SHORE	8,938,812	11,442,927	11,850,121	12,284,846	13,795,498	13,143,160	11,354,180	9,633,908	-2,650,848	-22%
QUINSCAMOND	5,436,275	6,841,324	7,140,699	7,373,730	8,261,410	7,870,759	6,862,433	5,822,760	-1,550,970	-21%
ROXBURY	4,013,555	4,820,928	6,383,729	7,361,962	8,577,311	8,171,712	7,059,424	5,989,906	-1,372,056	-19%
SPRINGFIELD	9,671,014	12,133,391	12,421,487	13,169,470	14,887,907	14,183,914	12,253,269	10,398,872	-2,772,598	-21%
COMMUNITY COLLEGES	91,705,652	115,983,202	124,154,715	128,670,350	147,582,288	140,603,662	121,810,179	101,355,679	-25,314,671	-20%
GRAND TOTAL	425,750,643	527,052,492	548,048,640	578,476,053	624,927,354	589,970,308	497,178,958	428,546,196	-149,909,657	-26%

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